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March 16, 1993

Ms. Donna R. Searcy
Secretary
Federal Communications Commission
Room 222
1919 M Street, N.W.
Washington, D.C. 20554

Re: CC Docket No. 92-297

Dear Ms. Searcy:

On behalf of Digital Microwave Corporation, we are filing an original and eleven (11) copies in the above-referenced rule making proceeding.

If there are any questions, please communicate with us.

Respectfully submitted,

FLETCHER, HEALD & HILDRETH

George Petrutsas
Counsel for Digital Microwave Corporation

GP:cej
Enclosures

ORIGINAL

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Rulemaking to Amend Part 1 and Part 21 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band and to Establish Rules and Policies for Local Multipoint Distribution Service	)	CC Docket No. 92-297
	)	RM-7872; RM-7722

To: The Commission

COMMENTS OF DIGITAL MICROWAVE CORPORATION

Digital Microwave Corporation ("DMC"), by its attorneys, hereby submits its Comments on the Notice of Proposed Rulemaking released in the above-captioned proceeding on January 8, 1993 (the "Notice").

DMC designs, manufactures and markets advanced, high performance digital microwave radio equipment, primarily for use in the 2 GHz, 6 GHz, 10 GHz, 18 GHz and 23 GHz bands. DMC's products have the capacity to transmit and receive multiple DS1 and DS2, and single DS3 lines carrying voice, data and video signals. DMC is one of the largest suppliers of microwave equipment in the global market and the fourth largest supplier in the U.S. market. Its customers include common carriers seeking to offer a variety of digital transmission services to their customers, and private users and governmental agencies which build their own private short haul telecommunications networks. DMC is one of the largest exporters of U.S. made microwave equipment.

In the Notice, the Commission proposes to reallocate the entire 2000 MHz of spectrum in the 27.5-29.5 GHz range (the "28 GHz

band") from the Common Carrier Point-to-Point Microwave Service to a new Local Multipoint Distribution Service ("LMDS"). The Commission foresees new use of this band primarily by providers of video programming to the public. While DMC recognizes the potential public interest benefits of LMDS, DMC urges at the same time the Commission to preserve at least 500 MHz of spectrum in the 28 GHz band for common carrier and private point-to-point communications services, noting the readily predictable growth in the demand for support services for the cellular telephone service, for the planned personal communications services ("PCS"), as well as for other short haul, high capacity communications requirements.

I. The Commission Must Preserve Spectrum in the 28 GHz Band to Provide Support for Future Growth in PCS, Cellular, and Other Common Carrier and Private Services.

One of the premises of the proposed reallocation of the 28 GHz band is that the band is not being used. Notice at para. 5. The problem with this analysis, however, is that it looks towards the past, rather than the future: while the availability of lower frequencies with better propagation characteristics may have limited the use of the 28 GHz band up to this point, the fixed microwave user environment is rapidly changing in ways that guarantee a substantial demand for the band in the foreseeable future.

A large and growing use of point-to-point microwave frequencies currently, and in the foreseeable future, will be for support functions in conjunction with the operation of cellular

telephone systems. Cellular carriers use point-to-point facilities to interconnect cell sites and "backhaul" traffic to switching centers. As the Commission knows, there has been explosive growth in cellular services in recent years,[1] and there is substantial evidence that this growth will continue. Furthermore, the U.S. is ready for the development of PCS. The Commission itself has relied on studies projecting over 60 million PCS users in the U.S. within ten years.[2] While there will likely be a variety of PCS services, it is likely that many PCS providers will use systems patterned after those used by cellular carriers but employing more and smaller microcells, each of which will require interconnection with each other and with switching centers. The 28 GHz band would be ideal for these purposes.

As the use of PCS and cellular telephone services grow, the facilities used to support those services will grow as well. While support facilities can and will use wireline connections where realistic and feasible, the use of short-haul high-capacity microwave hops are essential and will also be used extensively. Use of microwave facilities is often preferable in that it allows for greater flexibility, economy, and control by the service

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[1] In 1991, over 2 million people became new subscribers to cellular services, and $2.4 billion was invested in cellular infrastructure. See "State of the Cellular Industry" (Cellular Telephone Industry Association, 1992) at pages 4-5. In 1992, the industry added 3.5 million new subscribers, to a total of more than 11 million, and the number of new cell sites increased 31%. See Telecommunications Reports, March 8, 1993, at page 24.

[2] PCS Notice of Proposed Rulemaking, FCC 92-333, released August 14, 1992, at para. 26.

provider than the use of wireline facilities. The result is more rapid deployment of lower cost services to the consumer. In addition, DMC expects increased demand for frequencies in the 28 GHz band in the private services for short-haul, high capacity facilities, e.g., within manufacturing complexes, and building-to-building connections in metropolitan areas.

In light of the predictable and substantial growth in demands for point-to-point microwave communications services, retention of a relatively small portion of the 28 GHz band for those services would be prudent planning and in the public interest. The Commission has already substantially reduced the spectrum allocations for point-to-point microwave communications to make way for new technologies. For example, in ET Docket 92-9, the Commission has reallocated spectrum in the 2 GHz bands to PCS and other emerging technologies. Frequencies in the 18 GHz band have been made available for video distribution. The 12.2-12.7 GHz has been reallocated to direct satellite broadcasting. The H group of channels in the 2.5-2.6 MHz band have been reallocated to MMDS. And while the Commission proposes to relocate thousands of 2 GHz users to higher frequency bands (4, 6, 10 and 11 GHz), many of those bands are already crowded. When the <u>future</u> growth of point-to-point microwave requirements is added into the picture, it is clear that additional spectrum will be required. Therefore, DMC urges the Commission to consider future point-to-point requirements before reallocating the entire 28 GHz band for yet another video distribution service.

There are other important reasons for providing for point-to-point uses in the 28 GHz band. First, this band is particularly appropriate for the sort of uses that will be growing in the foreseeable future: short-haul large capacity communication links for interconnecting cellular or PCS sites and backhauling traffic. With shorter path distances, this band allows substantial frequency reuse and will be eminently suitable for interconnecting cellular sites, and more so for interconnecting efficiently the numerous microcell sites projected for use in PCS.

II. Preservation of Point-to-Point Use of Part of the 28 GHz Band Would be Consistent With International Allocations and Will Promote the Competitiveness of U.S. Manufacturers.

While the preservation of some point-to-point use of the 28 GHz band is necessary to support the projected growth of PCS and Cellular services, it will also foster the competitiveness of American microwave equipment manufacturers in international markets. DMC sells a substantial amount of equipment in the international market. DMC expects that the 28 GHz band will continue to be allocated for point-to-point communications internationally and that this band as well as the 38 GHz band will be used extensively in connection with the development of support services for PCS and similar services in other countries.[3] DMC also expect increased international demands for private short-haul communications that can be accommodated in the 28 GHz band. In fact, communications authorities of at least two countries, i.e.,

[3] The results of WARC-92 reconfirm the availability of the 27.0-29.5 GHz for "Fixed" services on a world-wide basis.

Germany and United Kingdom, have asked microwave equipment manufacturers to develop equipment and systems for the 28-29 GHz band. DMC is prepared to respond and plans to produce high capacity equipment for operation in the 28 GHz band as well as in the 38 GHz band for the international market. Authorizing similar uses for those bands in the U.S. will foster U.S. competitiveness internationally and, of course, create additional employment for U.S. workers' by allowing U.S. manufacturers to produce "uniform" and, therefore, less costly domestic and international product lines.

III. The 27.550, 27.800 and 29.250-29.500 MHz Segments of the Band Should be Allocated for Point-to-Point Communications in Parts 21 and 94.

As stated above, DMC does not oppose the Commission's proposal to authorize a local multipoint distribution service in the 28 GHz band. However, DMC believes that point-to-point services as well as one or more viable LMDS video distribution service can be accommodated in that band. DMC suggests that the allocation of 1.5 GHz should be sufficient to accommodate one or more LMDS service and that the remaining .5 GHz would provide the spectrum needed for the development of short-haul, high capacity microwave communications systems for domestic use and for export to international markets. Therefore, the public interest would be served by retaining an allocation of 500 MHz for point-to-point services in the 28 GHz band.

IV. Conclusion

In light of the foreseeable need to support the PCS, cellular, and other wireless communications services, and the public interest in fostering an internationally competitive U.S. microwave equipment manufacturing industry, the Commission should retain 500 MHz of spectrum in the 28 GHz band for point-to-point microwave use.

Respectfully submitted,

DIGITAL MICROWAVE CORPORATION

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